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Nurse-delivered interventions for mental health in primary care: a systematic review of randomized controlled trials

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Abstract

Background Mental health issues are increasingly prevalent within the community. Many people experiencing mental health issues have established relationships with primary care providers, including general practice nurses (GPNs). With the recent growth of general practice nursing, it is timely to explore the evidence for GPNs to provide mental health interventions for adults with mental illness within their scope of practice.

Objective To synthesize the evidence about nurse-delivered interventions in primary care for adults with mental illness.

Methods A systematic review of randomized control trials (RCTs) retrieved from the CINAHL, Ovid MEDLINE and EBSCO electronic databases between 1998 and 2017.

Results Nine randomized controlled trials were identified, which reported nurse-delivered interventions in primary care for the management of mental health in adults with mental illness. The heterogeneity of interventions and outcomes made comparison of studies difficult. Seven studies demonstrated significant improvement in at least one outcome following the intervention. In some studies, these improvements were sustained well beyond the intervention. Additionally, consumers were satisfied with the interventions and the role of the GPN.

Conclusion There is currently limited evidence of the impact of nurse-delivered interventions in primary care for adults with mental illness. Given the significant improvements in symptoms and the acceptability of interventions seen in included studies, there is a need for further robust research exploring the role of the GPN both individually and within the multidisciplinary team. Such research will enable stronger conclusions to be drawn about the impact of nurse-delivered interventions in primary care for adults with mental illness.

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Nurse-delivered interventions for mental health in primary care: a systematic review of randomised controlled trials

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Key messages

- GPNs frequently encounter individuals with mental health issues.
- Few GPNs are specialist mental health nurses.
- There are limited specialist mental health nurses working in primary care.
- Few trials of GPN delivered mental health interventions have been reported.
- GPN delivered mental health interventions can improve health outcomes.
- Mental health interventions delivered by GPNs are acceptable to patients.

Abstract

Background: Mental health issues are increasingly prevalent within the community. Many people experiencing mental health issues have established relationships with primary care providers, including general practice nurses (GPNs). With the recent growth of general practice nursing, it is timely to explore the evidence for GPNs to provide mental health interventions for adults with mental illness within their scope of practice.

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Conclusion: There is currently limited evidence of the impact of nurse-delivered interventions in primary care for adults with mental illness. Given the significant improvements in symptoms and the acceptability of interventions seen in included studies, there is a need for further robust research exploring the role of the GPN both individually and within the multidisciplinary team. Such research will provide enable stronger conclusions to be drawn about the impact of nurse-delivered interventions in primary care for adults with mental illness.

Keywords: general practice, mental health, nurses, review, systematic

INTRODUCTION

Mental health issues are a growing burden for global economies and health care systems (1). Internationally, it is estimated that one in two individuals will experience a mental illness during their lifetime and, at any one time, around one in five adults will be experiencing a mental health issue (2). While depression is recognised as the largest single cause of disability (3), anxiety disorders, schizophrenia, dysthymia and bipolar disorder are also among the top twenty causes of the global burden of disease (4). Individuals with mental illness report disproportionate levels of low education, higher unemployment and poorer physical health in the community (2). In terms of health delivery, between 76% to 85% of individuals with severe mental illness in low to middle income countries and 35% to 50% of individuals in high income countries receive no treatment (3).

Early assessment and intervention by the right health professional can enhance recovery and promote psychological wellbeing for people with mental health issues and mental illness (5). Primary care mental health provision is not a new phenomenon. Managing mental health and mental illness in primary care has been steadily increasing as health policy has moved to deinstitutionalise people with mental illness from hospitals into the community (6, 7). Additionally, there is an inadequate number of mental health specialists to manage the high numbers of people with mental health needs. With intensifying emphasis on health care policy that focuses mental health care and service delivery in non-acute care settings, and the need to integrate physical and mental health services to optimise treatment opportunities, it is essential that the responsibility for mental health be distributed across the health workforce (8, 9).

Various multidisciplinary models of primary care for mental health have been proposed (10). These range from attached professionals, whereby specialist mental health

professionals work within primary care settings, to stepped or matched care whereby patients are linked to either specialist or generalist services depending on their current level of need (10, 11). Common features of these models are the engagement of generalist primary care doctors and nurses in providing initial assessment, referral to specialist care as required, collaboration with specialist services and delivery of services to those requiring lower level care (10, 12). While the interface between primary care and specialist mental health services is important, given the need to strengthen primary care mental health services, this review is focussed solely on aspects of primary care service delivery. Given that 55% of American physicians treat psychological illnesses internally (13) and 90% of individuals in England receive mental health treatment solely in primary care without seeing a specialist (14), service delivery in primary care is vital to managing mental health within the community (9).

Nursing in primary care is at various stages of its evolution across the globe. While in the United Kingdom and New Zealand nurses have been employed within general practice for many years, in countries like Australia multidisciplinary primary care is a more recent model of care (15). Subsequently, the GPN role is somewhat variable internationally, shaped by the primary care system in each country, the degree of collaboration between primary care team members and the nature of nursing development (16). Although some GPNs may have specialty experience or qualifications this is not generally a requirement for these roles.

Regardless of their role and expertise, GPNs are frontline health care providers who encounter both individuals seeking treatment for mental health issues and those who have troubling mental health symptoms but are not overtly seeking assistance (12). This places them in a prime position, along with their primary care medical colleagues, to improve access and service delivery around mental health. This does not mean that all GPNs need

to become mental health specialists. Mental health nursing is a specialist practice that requires specific qualifications and expertise (12). However, it does mean all nurses need to possess knowledge and skills in mental health assessment, care and treatment, appropriate to their practice setting and in alignment with their scope of practice (12). Such preparation is currently provided within undergraduate nursing programs (17).

Whilst some have described GPNs as too busy or disinterested to be involved in mental health (5), others see them as an underutilised resource (18, 19). To provide high quality, person-centered care all health professionals need to actively assess and manage both physical and mental health. In doing so they have the potential to improve service delivery around physical issues for those with mental illness, and identify mental health issues in those with physical symptoms. There is growing recognition and interest amongst GPNs in expanding mental health knowledge and skills (20). Indeed, practice standards have been developed specifically for primary care nurses around mental health to assist in articulating their role and informing ongoing professional development (12, 21).

Primary care systems are optimised when multidisciplinary teams of health professionals work together to provide integrated care (22). However, it is clear that many primary care systems remain a long way from truly collaborative practice (23). Additionally, it is important to understand the impact of individual health professionals on patient outcomes. Despite the conceptual allure of nurse-delivered interventions in general practice (24), evidence to support or refute the impact and effectiveness of such interventions across various patient groups is still being generated (25). It is timely, therefore, to conduct a comprehensive literature review to systematically examine and synthesise the existing evidence for nurse-delivered interventions in primary care for adults with mental illness. Synthesising the knowledge in this area will inform future development of the GPNs role by identifying which interventions improved health outcomes and which were not beneficial. This understanding will help meet the growing workforce demands brought about by

increased mental health conditions managed in general practice and identify interventions that can assist GPNs to support adults with mental illness.

Methods

Objective

To synthesise the evidence about nurse-delivered interventions in primary care for adults with mental illness.

Design

This systematic review of randomised control trials (RCTs) followed a process of identification of the literature and quality appraisal as outlined by the Critical Appraisal Skills Programme (26)(CASP) for RCTs. The review was confined to RCTs as these represent the best available evidence to include in the review (27). Papers were analysed thematically and narrative synthesis was used to establish the current state of knowledge and to report findings (28, 29).

Search strategy

A comprehensive literature search was undertaken using CINAHL, Ovid MEDLINE and EBSCO Host electronic databases. The search used keywords including; mental health, mental illness, mental disorder, psychiatric illness and primary care, general practice, family practice and nurs*. The reference lists of papers identified by this search were also searched for additional papers.

Inclusion / exclusion criteria

Included papers were published between 1998 – 2017 in the English language. These papers reported an RCT investigating a GPN delivered intervention to improve mental health in adults with a mental illness (Table 1). Randomised controlled trials were selected

given their strength of evidence and in an attempt to compare like studies. Papers which focussed on coping with chronic conditions, or depressive symptoms in life limiting or serious illness were excluded as these papers did not necessarily include patients with a formal diagnosis of mental illness. It was considered inappropriate to compare outcomes between studies where participants had a mental illness and those who had mental health symptoms or issues. Additionally, papers were excluded where the GPN was part of a collaborative intervention as it was not possible to determine whether the outcome was due to the nurse intervention alone. Similarly, papers reporting interventions delivered by a mental health nurse were excluded, as specialist nurses have additional education and highly developed skills that would influence the nature of intervention delivered and outcomes achieved.

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Published between 1997-2017	Opinions pieces, editorials, reviews or other non-research papers
English language	Outcomes not related to mental health
Paper reported a randomised controlled trial	Paper reported studies of depression in life limiting or serious conditions (e.g. stroke, cancer)
Reported a GPN intervention or assessment to address mental health	Related to holistic chronic disease management and coping with chronic disease
Outcomes measured in terms of patient mental health	Interventions delivered by a mental health nurse

Study selection

The initial database search identified 652 papers (Figure 1) which were imported into NVivo X8. After the removal of duplicates (n=487), the titles and abstracts of the remaining papers (n=165) were reviewed against the inclusion criteria. The full text of the remaining

papers (n=34) were screened by one author (##). Papers not meeting the inclusion criteria included three protocol studies (30-32), two papers reporting instrument validation (33, 34) and two studies focusing on outcomes of a chronic condition rather than mental health outcomes (35, 36). All authors reached agreement about the nine included studies.

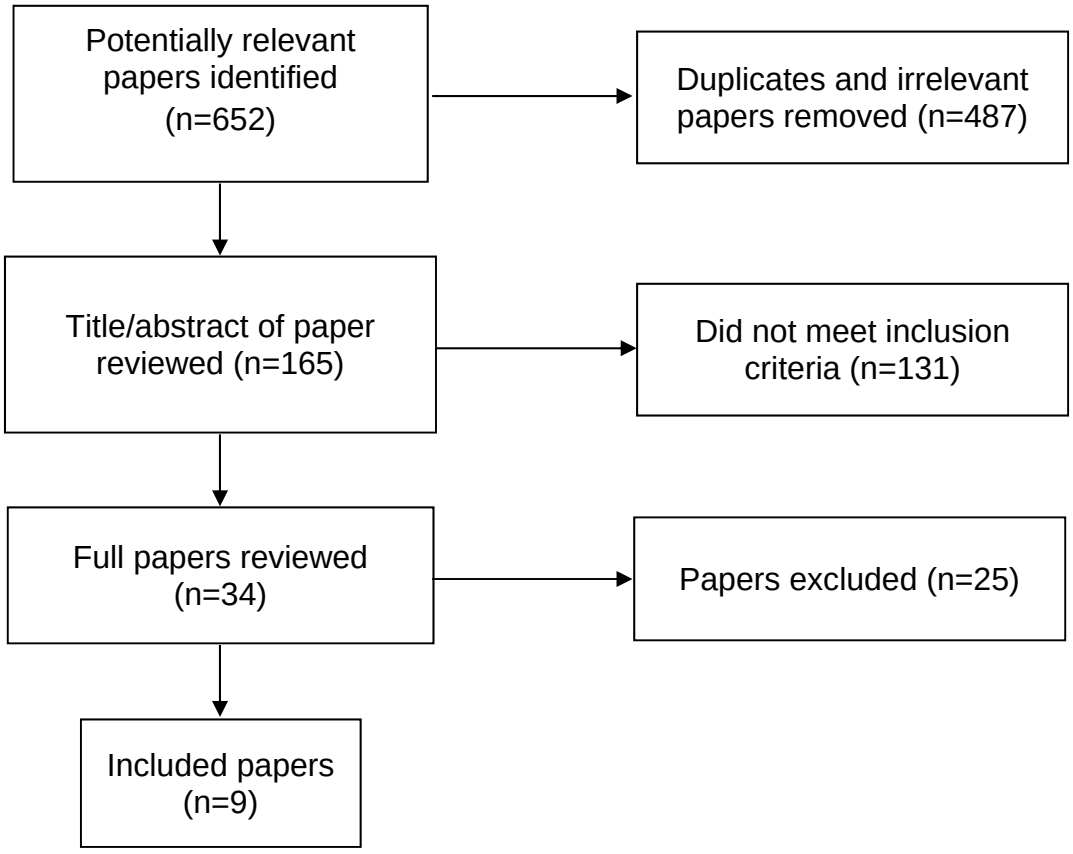

FIGURE 1. Process of paper selection – Prisma Flow diagram

Data abstraction and synthesis

A matrix summary table was created and data from each paper was extracted into the table by one author (##) (Table 2). All authors then studied the extracted data. As there was significant heterogeneity of the papers, the principles of thematic analysis informed a narrative synthesis rather than a meta-analysis (28, 29).

Quality appraisal

Two members of the research team (## & ##) independently assessed the quality of all included papers using the CASP for RCTs (26). The CASP eleven-item checklist ensured the researchers evaluated the intervention and outcome measures in each paper. Positive responses to the first two items in the appraisal tool resulted in the paper progressing to a full appraisal. Given the small number of included papers and minimal quality issues identified, all papers were included in the review.

INSERT TABLE 2 HERE

Table 2. Summary of Included Studies

Reference	Country	Sample	Intervention	Follow-up	Findings
Burns et al. (37)	UK	149 patients with schizophrenia 79 intervention 70 control	Structured assessment by GPN	1 year	• Nurses who attended the study day, rather than one-to-one training, were more likely to complete patient assessments. • There were no significant differences between the intervention and control groups other than a higher rate of admissions in the control group. • GPNs were more successful in completing the structured assessments than GPs.
Buszewicz et al. (38)	UK	558 patients with chronic/recurrent major depression or dysthymia 282 intervention 276 control	Nurse-led pro-active care (10 GPN intervention sessions)	2 years	• At 24 months there was no significant improvement in Beck Depression Inventory (BDI-II) score or quality of life (Euroquol-EQ-VAS), but a significant improvement in functional impairment (Work and Social Activity Schedule) of 2.5(95% CI:0.6,4.3, p=0.010) in intervention patients • Attending all GPN sessions could lead to a BDI-II score reduction of 3.7 points compared to control patients. • Antidepressant use dropped slightly in both groups, but was significantly higher in the GPN intervention group.
Hunkeler et al. (39)	USA	302 patients starting anti-depressant therapy Intervention 179 Control 123	Ten 6-minute calls over 4 months by nurses; Or telephone and in-person supportive contact by trained peer support.	6 weeks & 6 months	• Nurse-based telehealth patients with or without peer support more often experienced 50% improvement on the Hamilton Depression Rating Scale at 6 weeks (50% vs 37%; P=.01) and 6 months (57% vs 38%; P=.003). • Telehealth care improved mental functioning at 6 weeks (47.07 vs 42.64; P=.004) and treatment satisfaction at 6 weeks (4.41 vs 4.17; P=.004) and 6 months (4.20 vs 3.94; P=.001). • There was no improvement to medication adherence with nurse telehealth care compared to usual care • Nurse telehealth care was superior to usual physician care with respect to reduced symptoms, improved functioning, and greater satisfaction with care for depression.

Reference	Country	Sample	Intervention	Follow-up	Findings
Johnson et al. (40)	Canada	157 patients with Type 2 diabetes and depression 95 intervention 62 control	RN case-management	12 months	• Intervention patients had greater 12-month improvements in the Patient Health Questionnaire scores (7.3 [SD 5.6]) compared with active-control subjects (5.2 [SD 5.7], P = 0.015). • Clinically important recovery from depressive symptoms occurred in 61% of intervention patients compared with 44% of control groups (P = 0.03). • Recovery of depressive symptoms (i.e., PHQ reduced by 50%) was greater among intervention patients (61% vs. 44%, P = 0.03).
Lamers et al. (41)	Netherlands	187 patients with COPD aged ≥60 years with a diagnosis of depression Intervention 96 Control 91	GPN-led Minimal Psychological Intervention (MPI)	9 months	• GPNs with no specific mental health expertise successfully completed a four-day training given by a psychiatrist, a GP and a psychologist. • Patients receiving the MPI had significantly fewer depressive symptoms (mean BDI difference 2.92, p = 0.04) and fewer symptoms of anxiety (mean SCL difference 3.69, p = 0.003) at nine months than patients receiving usual care. • GPN-led MPI reduced symptoms of depression and anxiety and improved disease-specific quality of life in elderly COPD patients. • Intervention group had significantly better scores on the St George Respiratory questionnaire impact scale (social functioning and psychological disturbances) at 3 (p=0.02) and 9 (p=0.003) months
Lamers et al. (42)	Netherlands	361 chronically ill patients with depression Intervention 183 Control 178	GPN-led MPI	9 months	• Nine months after the intervention, patients receiving the MPI had significantly fewer depressive symptoms; • Intervention patients were more likely than usual-care controls to show a ≥ 50% reduction in depressive symptoms.
Morgan et al. (43)	Australia	400 patients with depression and diabetes or heart disease Intervention 206 Control 194	GPN case management	12 months	• Mean depression scores after 6 months of intervention decreased by 5.7±1.3 compared with 4.3±1.2 in control, a significant (p=0.012) difference. • Intervention practices demonstrated adherence to treatment guidelines and intensification of treatment for depression, where exercise increased by 19%, referrals to exercise programs by 16%, referrals to mental health workers (MHWs) by 7% and visits to MHWs by 17%. • Intervention improvements were sustained over 12 months, with a significant (p=0.015) decrease in 10-year cardiovascular disease risk from 27.4±3.4% to 24.8±3.8%.

Reference	Country	Sample	Intervention	Follow-up	Findings
Mynors-Wallis et al. (44)	UK	151 patients with major depression	Problem solving treatment by research GP or research GPN or antidepressant medication or a combination of both	12 months	• While patients in all groups showed a clear improvement in the Hamilton Rating Scale for Depression and Beck depression inventory during treatment, there were no differences in depression recovery between GP or GPN delivered interventions at 12 or 52 weeks. • The combination of problem solving and antidepressant was no more effective than either treatment alone. • There was no difference if a GP or GPN delivered the problem solving.
Richards et al. (45)	UK	139 patients with mild to moderate anxiety and/or depression Intervention 75 Control 64	A cognitive behavioural-based self-help package facilitated by GPNs	3 months	• 41 patients were followed up to 3 months. • Patients receiving the GPN intervention were more likely to be below clinical threshold at 1 month compared to the ordinary care group (OR = 3.65, 95% CI = 1.87 to 4.37). This difference was less obvious at 3 months (OR = 1.36, 95% CI = 0.52 to 3.56). • At 3 months significant improvement was seen in both groups on the CORE-OM and the EuroQol compared to baseline. • Patients in the GPN intervention group were more satisfied than patients treated by GPs with ordinary care. • Mental healthcare costs in the year following study enrolment were the same across groups. • General practice costs for the ordinary care group were higher than the GPN intervention group.

RESULTS

Included papers

Most of the nine included studies were conducted in the United Kingdom (n=4; 44%)(37, 38, 44, 45), with two papers (22%) reporting GPN delivered interventions in the Netherlands (41, 42) and one each from the USA (39), Canada (40) and Australia (43). Table 2 provides a summary of included papers.

The age of patients ranged from 35 (44), through to 71 years (41). Only two studies (22%) reported more male than female participants (41, 42). The initial diagnosis of participants varied from major depression (38, 39, 44), through to moderate depression or dysthymia (40-43, 45). In four studies (44%), participants specifically had comorbid chronic disease with mental illness (40-43). Only one study (11%) focussed on patients with schizophrenia (37).

All GPNs received training prior to delivering the intervention. The length of training varied from a six-hour workshop (39), through to a three-day training session (38, 45). Types of interventions ranged from structured assessments (37), intensive pro-active care (38), telehealth (39), behaviour therapies (41, 42, 45), case management (40, 43) and combination therapy (44). Heterogeneity in both study outcomes and assessment measures precluded meta-analysis. The following discussion provides a narrative synthesis of the various outcomes used in the included studies.

Depression Symptoms

While the presence of depressive symptoms was measured as an outcome in eight studies (89%)(Table 3), the heterogeneity of outcome measures across studies make comparisons difficult. Nurse based telehealth (39), GPN delivered case management (40, 43) and a mini psychological intervention (41, 42) all sustained

significantly decreased depressive symptoms over 6-12 months. Indeed, one intervention (40) reported clinically important recovery in 61% of the intervention group.

In contrast, Mynors-Wallis et al. (44) reported a clear improvement in depression scores across all groups, but no significant difference in depression between a GP and GPN delivered intervention. Two studies (22%)(38, 45) showed no significant improvement in depression and depressive scores over the course of the intervention.

Table 3. Impact of Intervention on Depression

Reference	Impact of Intervention on Depression
Buszewicz et al. (38)	• At 24 months there was no significant improvement in Beck Depression Inventory (BDI-II) score in intervention group. • Anti-depressant usage was higher in the intervention group over the follow-up period.
Hunkeler et al. (39)	• Nurse based telehealth experienced 50% improvement on the Hamilton Depression Rating Scale at 6 weeks (50% vs 37%; P=.01) and 6 months (57% vs 38%; P=.003).
Johnson et al. (40)	• Intervention patients experienced greater improvements in the Patient Health Questionnaire scores (P = 0.015) over 12-months. • Intervention patients were more likely to have clinically important recovery from depressive symptoms than control patients (61% vs 44%; P = 0.03).
Lamers et al. (41)	• Fewer depressive symptoms (mean BDI difference 2.92, p = 0.04) at nine months than usual care.
Lamers et al. (42)	• Significantly fewer depressive symptoms at 9 months (mean BDI difference 2.09, p=0.03). • More likely to show a ≥ 50% reduction in depressive symptoms compared to usual care relative to baseline values.
Morgan et al. (43)	• Significantly reduced mean depression scores after 6 months (5.7±1.3 vs 4.3±1.2; p=0.012).
Mynors-Wallis et al. (44)	• Patients in all groups showed a clear improvement over 12 weeks. • There was no significant difference in Hamilton Rating Scale for Depression or BDI outcome between GP or GPN delivered problem solving treatment at 6, 12, or 52 weeks.
Richards et al. (45)	• Patients receiving the GPN intervention were more likely to be below clinical threshold at 1 month compared to the ordinary care group (OR = 3.65, 95% CI = 1.87 to 4.37). However, this difference was less obvious at 3 months (OR = 1.36, 95% CI = 0.52 to 3.56).

Anxiety Symptoms

Anxiety symptoms were measured in two studies (22%)(41, 45). Although Richards et al. (45) sought to determine different clinical outcomes for mild to moderate anxiety, they only reported the CORE-OM which includes a subscale on symptoms. Patients in this study were more likely to be below clinical threshold at 1 month, although the difference between groups was reduced at 3 months (45). Lamers et al. (41), however, demonstrated that the intervention group had significantly fewer anxiety symptoms than those receiving usual care at nine months.

Functional outcomes

Four studies (44%) reported functional outcomes, comprising social (38, 41, 44) and physical functioning (43). The pro-active GPN intervention sessions reported by Buszewicz et al. (38) suggest that there were greater improvement in function than in depressive symptoms. While their study showed no improvement in depression score or quality of life, functional impairment was significantly improved in the intervention group at 2 years (38).

Other studies reported various functional measures. Morgan et al. (43) demonstrated improved exercise participation at both six months and 12 months. Mynors-Wallis et al. (44) demonstrated improved social adjustment across all study arms, with no significant differences between groups. Additionally, Lamers et al. (41) demonstrated

that the intervention group had significantly better scores around social functioning and psychological disturbances at 3 and 9 months.

Medication use

The four studies (44%) which employed medication use as an outcome measure showed variable findings (38, 39, 43, 44). Mynors-Wallis et al. (44) demonstrated that a combination of problem solving treatment and antidepressant medication was no more effective than either therapy by itself. Buszewicz et al. (38) reported that antidepressant use dropped slightly in both groups, although was significantly higher in the intervention group. In contrast, Hunkeler et al. (39) found that usual care patients used more medication than intervention patients, although there was no improvement in medication adherence in the intervention group when compared to usual care. Morgan et al. (43) reported that neither the intervention or control group experienced significant shifts in antidepressant use. However, they did find that medication adherence was significantly greater at 12 months among intervention patients (43). These findings highlight the complexity of using medication use as an outcome measure in mental health research.

Patient satisfaction

All three studies (33%) which measured patient satisfaction as an outcome concluded that participants were satisfied with their treatment (39, 40, 45). Richards et al. (45) also concluded that patients in the GPN intervention were more satisfied for similar clinical outcomes and costs than patients seen by general practitioners. Hunkeler et al. (39) reported that patients receiving a nurse-led telehealth intervention were more satisfied at both 6 weeks and 6 months. In contrast, Johnson et al. (40) found minimal difference in satisfaction between intervention and control groups.

While Lamers et al. (41), (42) did not specifically measure patient satisfaction, process evaluation found that patients were highly satisfied with the GPN intervention and would recommend it to others with chronic conditions.

DISCUSSION

Few RCTs of nurse-delivered interventions for mental illness in primary care have been reported in the literature. The heterogeneity of included trials precluded meta-analysis. While included studies demonstrated significant improvements in depressive and anxiety symptoms, functional outcomes and medication use, the diversity in interventions reported, small number of studies and limitations of included studies highlight the need for additional rigorous investigations to provide a strong evidence base to inform nursing practice in this area. This is important to ensure that nurses in primary care are utilised effectively to optimise the care of the growing numbers of adults presenting to primary care with mental illness.

An important finding of this review, although only measured in a few studies, was that patients were largely satisfied with the GPN intervention. Globally, patient satisfaction is considered an important indicator of the effectiveness of health care service delivery (46). In the context of this review, this finding highlights that patients found the GPN intervention acceptable and that it met their needs. Being satisfied with the service provided and the health professionals providing the service can promote patients to remain engaged in the service (46, 47). Given the chronic nature of many mental health issues, it is important to ensure that services promote consumer engagement in order to optimise health outcomes.

The second important finding of this review relates to the trend toward improved outcomes. While the outcomes of included studies are difficult to compare given the

variety of outcome measures used, most studies reported improvement following the intervention. Only two studies failed to show significant improvement in any measure (44). In one study improvement was seen across all arms, with no significant difference between groups (44). In the other, the intervention only involved a structured assessment which was likely not of sufficient intensity to effect significant clinical improvement in this complex group (37). Reduction in symptoms, improvements in functioning and enhancing quality of life is difficult to assess in mental health from a quantitative perspective as it involves how the patient feels, interacts and behaves. Given the oscillating trajectory of mental illness (48), measuring change is often more long term and qualitative in nature. As this review highlights, clinical tools that measure mental health are frequently used in combination with quality of life indicators and social functioning scales (31, 38, 44). It is also imperative to ascertain the person's lived experience with regard to both clinical and personal recovery. Therefore, future trials need to incorporate these broader measures in addition to traditional quantitative outcomes.

The nurses who implemented the interventions included in this review were purposely not specialist mental health nurses. Specialist mental health nurses have an important role to play in the care of those with mental illness (49, 50) and have been demonstrated to contribute to improvements in a range of outcomes (5, 19). However, in many jurisdictions they are simply not sufficiently available within primary care (51). General nurses are, therefore, required to manage the increasing number of people presenting to general practice with mental illness and mental health issues (12). Given the variations in countries where the studies analysed took place, it is likely that the nurses would have had variable pre-registration preparation around mental health and different experiences of mental health during their

previous clinical practice. While general nurses are expected to effectively assess and manage those with mental health issues, it is only in recent years that the role of primary care nurses in mental health has developed (52, 53). Further research around the education and training needs of GPNs could assist in ensuring that professional development opportunities target areas where skill development is required.

Strengths and limitations

This is the first systematic review on the clinical impact of nurse-delivered interventions in primary care for adults with mental illness. Given the increasing prevalence of mental health issues presenting to general practice and the relatively limited specialist mental health nursing workforce within primary care (12), we specifically chose to focus on interventions delivered by GPNs. The review, therefore, represented the current environment of clinical practice and its skill and patient mix.

There are several limitations of the review. The small number of included papers and the heterogeneity of both interventions and patient groups, limits the strength of the evidence and the subsequent conclusions that can be drawn. However, our systematic search strategy ensures that we gathered all available literature. Additionally, the review was limited to RCTs of nurse-led interventions for adults with mental illness reporting patient outcomes. While this ensured that the most robust research was included, potentially other research around relevant nurse-delivered interventions was excluded. Finally, the focus on nurse-delivered interventions may have excluded studies where team based interventions were conducted. Further research around the impact of multidisciplinary primary care interventions, including the GPN, would provide additional evidence for the value of strengthening primary

care teams to provide collaborative interventions. To date, such collaborative practice, is not commonly seen in usual care (23).

CONCLUSION

Currently, there is a small body of high-level evidence to support the impact of nurse-delivered interventions in primary care for mental illness. However, this review demonstrates that the available evidence indicates that nurse-delivered interventions in primary care can significantly reduce depression and anxiety symptoms and are acceptable to consumers. Further robust research is required to identify specific aspects of interventions that are most effective and explore interventions that are effective across multiple outcome measures. Given the subjective nature of recovery from mental illness, it is important that this research considers clinically significant change and qualitative measures of recovery, in addition to quantitative measures.

Declarations / Acknowledgements

Ethical approvals

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Conflict of interest

No conflict of interest has been declared by the author(s).

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